

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 October 2004 (28.10.2004)

PCT

(10) International Publication Number
WO 2004/093090 A1

(51) International Patent Classification: G11C 11/56, 5/14, 7/06, 16/26

(21) International Application Number:
PCT/US2004/010991

(22) International Filing Date: 8 April 2004 (08.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/414,132 14 April 2003 (14.04.2003) US

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(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

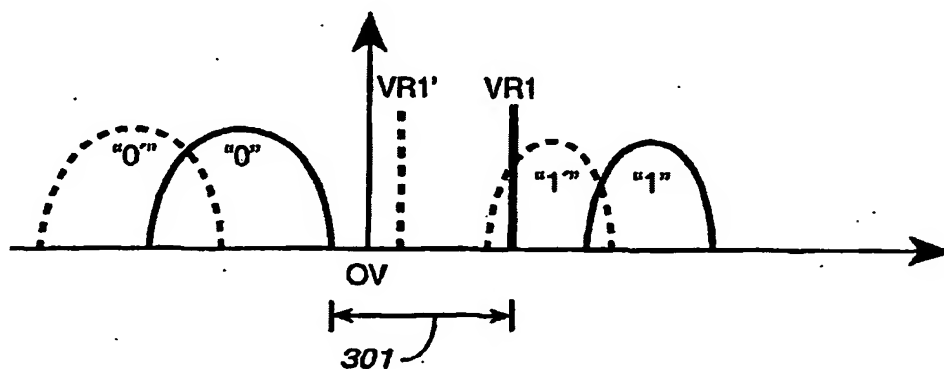
(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,
GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

Published:

— with international search report
— before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: READ AND ERASE VERIFY METHODS AND CIRCUITS SUITABLE FOR LOW VOLTAGE NON-VOLATILE
MEMORIES



(57) Abstract: In a non-volatile memory, the read parameter used to distinguish the data states characterized by a negative threshold voltage from the data states characterized by a positive threshold voltage is compensated for the memory's operating conditions, rather than being hardwired to ground. In an exemplary embodiment, the read parameter for the data state with the lowest threshold value above ground is temperature compensated to reflect the shifts of the storage element populations on either side of the read parameter. According to another aspect, an erase process is presented that can take advantage the operating condition compensated sensing parameter. As the sensing parameter is no longer fixed at a value corresponding to 0 volts, instead shifting according to operating conditions, a sufficient margin is provided for the various erase verify levels even at lowered operating voltages.

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